

TWO NEW SPECIES OF *SERRURIA* SALISB. (PROTEACEAE) FROM THE SOUTH WESTERN CAPE

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ABSTRACT

Two new species of *Serruria* with basipetally opening paniculate inflorescences are described; *Serruria confragosa* Rourke from the Cold Bokkeveld and *Serruria williamsii* Rourke from the Riviersonderend mountains, south western Cape.

UITTREKSEL

TWEE NUWE *SERRURIA* SALISB. (PROTEACEAE) SOORTE VANAF DIE SUIDWESTELIKE-KAAP

Twee nuwe *Serruria*-soorte met basipetaal-opende pluimvormige bloeiwyses word beskryf; *Serruria confragosa* Rourke vanaf die Koue Bokkeveld en *Serruria williamsii* Rourke vanaf die Riviersonderendberge, Suidwestelike-Kaap.

Serruria confragosa Rourke, sp. nov.; frutex 0,7–1,0 m altus, monocaulis, ramis flexuosis, foliis in verticillastros; sed a inflorescentia paniculata sub-corymbosa, 6–14 spicis laxis compositis, spicae basipetae dehiscentes intra inflorescentiam, praecipue distinguitur.

An erect sparsely branched shrub 0,7–1,0 m in height with a single main stem branching into approximately 12–18 erect, simple to only very rarely dichotomous branches. Branches flexuose, glabrous, devoid of leaves for the greater part of their length; leaves usually clustered towards the end of each annual growth flush forming pseudoverticills; reduced to small, acute, glabrous scales on proximal part of each growth flush. Leaves ascending, 30–60 mm long, glabrous, bipinnatifid; segments acicular-terete about 1,5 mm in diam., upper surface minutely canaliculate, apices mucronate. Inflorescence compound; a terminal panicle of 6–14 lax spikes displaying first and second order branching, opening basipetally (centripetally) and usually developing into a loose corymb after anthesis. Peduncle and inflorescence axes 2–3 mm in diam., densely adpressed sericeous; main peduncle 20–50 mm long; axillary axes 10–30 mm long proximally becoming shorter below central terminal spike. Spikes 14–20 flowered, turbinate in bud, elongating after anthesis, bracts and floral bracts ovate, acute to acuminate, densely clasping, adpressed sericeous. Perianth straight 12–14 mm long, tube region glabrous 2–3 mm long; claws densely sericeous, slightly broadened proximally; anthers

elliptic-cymbiform, densely sericeous. *Anthers* sessile. *Style* straight, glabrous, 10–12 mm long. *Pollen presenter* black, clavate, with an annulate thickening at junction with style; stigmatic groove terminal. *Ovary* spherical, 1–2 mm long, distally beset with dense white trichomes. *Hypogynous scales* linear-subulate 1–2 mm long. *Fruit* a slightly compressed cylindric achene 5–6 mm long, truncate and setose at base, becoming densely strigose distally around persistent style base.

Type: Skurweberg mountains on summit of Graskop between Boboskloof en Onderboskloof, Cold Bokkeveld (-CC), 10/10/1968, *J. P. Rourke 1136* (NBG, holotype; K, PRE, BOL, MO, STE, S, isotypes).

This species is distinguished by its flexuose branches on which the leaves are clustered towards the end of each growth flush in pseudoverticills, and by its loosely corymbose paniculate inflorescences of between 6 and 14 lax spikes, the spikes opening basipetally (centrifugally) within the whole inflorescence.

Serruria confragosa is not obviously allied to any other species in the genus.

The earliest recorded collection of this species was made in 1945 by a Mr. William Ghent somewhere along the Olifants River valley in the Cold Bokkeveld. No further material came to light until 1961, when it was recollected in the same general area by Dr. Ion Williams who kindly showed me specimens growing at Boboskloof. Subsequently I have discovered several populations in the upper Olifants River valley between Onderboskloof and Visgat. At present *S. confragosa* is not known beyond this narrow range—approximately 15 km, in a north-south direction. Most populations are situated on the eastern side of the river in the rough rocky mountainous terrain known as the Skurweberg (Rough Mountain), whence the specific epithet 'confragosa' is derived.

SPECIMENS EXAMINED

CAPE PROVINCE—3219 (Wuppertal): Onderboskloof, Cold Bokkeveld (-CC), 15/10/1961, *Williams 42A* (NBG); Skurweberg mountains on summit of Graskop between Boboskloof and Onderboskloof, Cold Bokkeveld, 10/10/1968, *Rourke 1136* (NBG, K, PRE, MO, S, STE, BOL).
—3319 (Worcester): Boboskloof (-AA), 25/10/1967, *Williams 1113* (NBG); Ceres division, Olifants River valley between Ceres district and Citrusdal, 1945, *Wm. Ghent s.n.* (BOL 23211); Between Visgat and Bollemakiesie Kloof, upper Olifants River valley, 2/12/1975, *Rourke 1507* (NBG, K, PRE, MO).

Serruria williamsii Rourke, sp. nov.; frutex 0,5–2,0 m altus; foliis 150–200 mm longis, bi-vel-tripinnatisectis, pinnis crassis 2–4 mm latis, et pulvino amplo, in verticillastros dispositis, distinguendus. Differt a *S. elongata* (Berg.) R. Br. propter inflorescentiam paniculatam grandem, 300–550 mm longam.

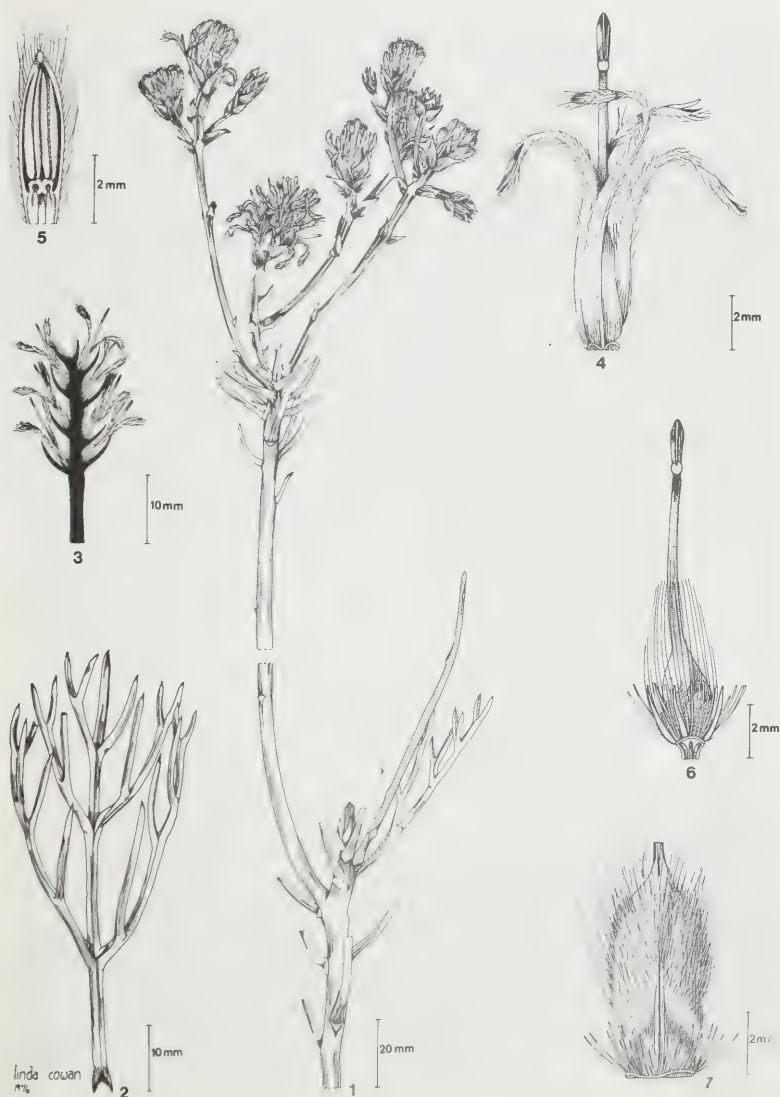


FIG. 1.

Serruria confragosa. 1, inflorescence; 2, leaf; 3, longitudinal section through a single spike; 4, flower; 5, perianth limb and anther; 6, gynoecium showing ovary, style, pollen presenter and hypogynous scales; 7, mature fruit. (Drawn from type, *Rolfe 1136* in NBG).



FIG. 2.
Serruria confragosa. Flowering shoots showing clustering of leaves in pseudover-
tills.

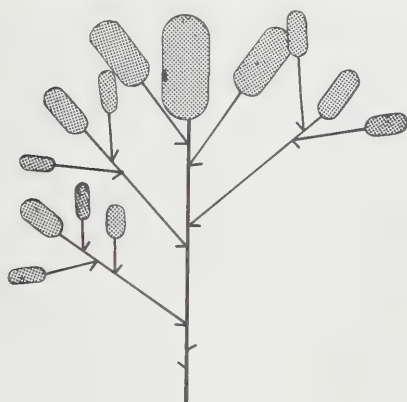


FIG. 3.

Serruria confragosa. Diagrammatic representation of inflorescence.

An erect sparsely branched shrub 0.5–2.0 m in height with a single short main trunk to 3 mm in diam.; branching into main axes near base. *Branches* erect, stout, 5–10 mm in diam., glabrous, reddish in live state; each growth flush bare in proximal region where leaves are reduced to scales, fully developed leaves clustered terminally on each growth flush resulting in leaves being arranged up branches in pseudovercills. *Leaves* 150–220 mm long, glabrous, bipinnatifid to occasionally tripinnatifid, petiolate with a prominent pulvinus; pinnae stout and fleshy, terete, 2–4 mm thick, canaliculate on upper surface, apices sharply cuspidate. *Inflorescence* a massive much branched terminal panicle of capitula, 300–550 mm long; main peduncle stout 3–5 mm in diam., glabrous, reddish brown, 100–300 mm long, usually displaying second order and occasionally third order branching; capitula globose 18–22 mm in diam., opening basipetally (centrifugally) within panicle. *Bracteoles* glabrous, cymbiform-subulate, acute to acuminate, 2–6 mm long. *Involucral bracts* obovate-cymbiform, 2–3 mm long, 2 mm wide, apex mucronate, margins thickly villously fimbriate. *Floral bracts* obovate-cymbiform, keeled, 2 mm long, 1–2 mm wide, apex mucronate, margins thickly villously fimbriate. *Perianth* 10–12 mm long, straight and tubular in bud, separating to near base on opening; tube glabrous, 1 mm long, slightly inflated; claws slender, shortly and densely sericeous; limbs elliptic-acute, short and densely sericeous. *Anthers* sessile. *Style* filiform 10 mm long, glabrous. *Pollen presenter* clavate, slightly annulately thickened at junction with style. *Ovary* 2 mm long, densely lanate with straight pale golden trichomes. *Hypogynous scales* filiform-subulate, 2 mm long. *Fruit* an obovoid to cylindric, sparsely



FIG. 4.

Serruria williamsii. Top left, a flowering branch; top right, part of the paniculate inflorescence showing the capitula opening in basipetal (centrifugal) sequences; bottom, type locality on Jonas Kop, with Dr. I. J. M. Williams.

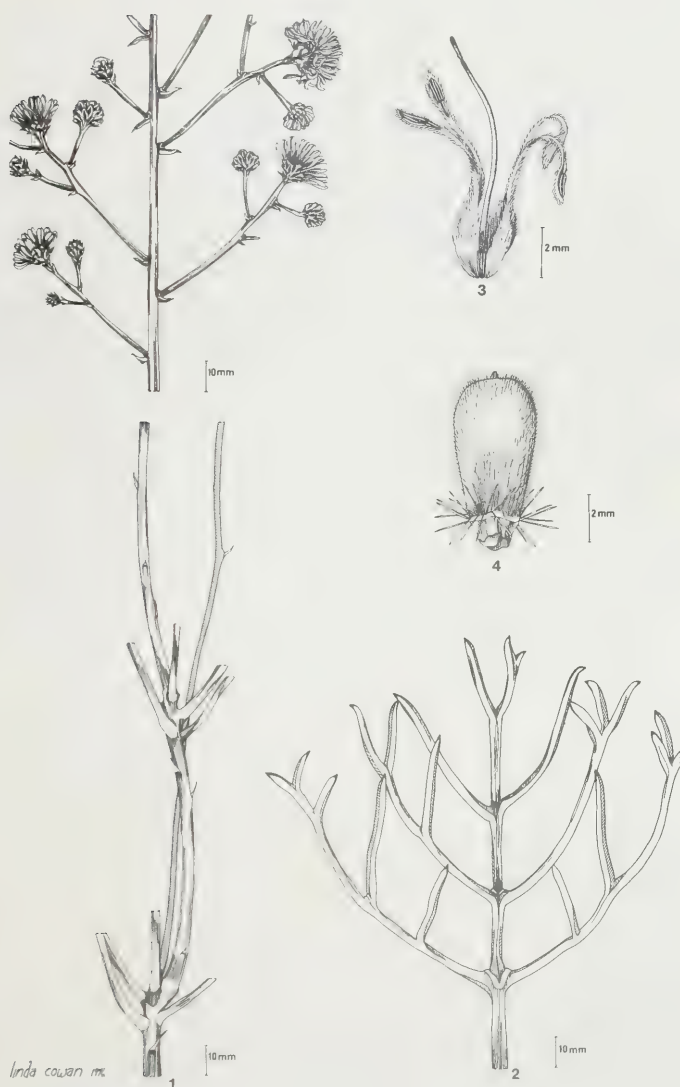


FIG. 5.

Serruria williamsii. 1, part of inflorescence; 2, single leaf; 3, flower; 4, mature fruit (Drawn from type, Rourke 1307 in NBG).

sericeous achene, 6 mm long, truncate and pedicellate at base, style base persisting apically.

Type: North-West slopes of Jonas Kop near Horlosie Kloof, 19/10/1971, *J. P. Rourke 1307* (NBG, holotype; PRE, K, MO, BOL, STE, S, NSW, L, isotypes).

Serruria williamsii falls within the same group of species as *S. elongata* (Berg.) R.Br., *S. leipoldtii* Phillips & Hutchinson and *S. triternata* (Thunb.) R.Br.

It is at once distinguished by its terminal, 300–550 mm long, much branched paniculate inflorescence of globose capitula, the capitula opening on the panicle in basipetal (centrifugal) succession. The massive bipinnate to occasionally tripinnately compound leaves, 150–200 mm long, are clustered terminally on each growth flush, but are elsewhere reduced to scales, thereby giving the impression of being arranged in pseudoverticills. Their stout fleshy pinnae, 2–4 mm wide, are thicker than in any other *Serruria*.

W. J. Burchell made the earliest recorded collection of this magnificent species on the 27th February 1815. While making a halt at Genadendal on his return journey to Cape Town, Burchell ascended the Baviaanskloof mountains to the north of the village. There he collected a sterile specimen on the northern slopes of the present-day Jonas Kop. It was not collected again until May 1968, when Dr. Ion Williams rediscovered a large population on the middle north slopes of Jonas Kop—probably within a kilometre or two of the site where Burchell's collection was made.

Thus far, *Serruria williamsii* is only known from the northern slopes of the Bosjeveld mountains. Scattered populations occur between Horlosie Kloof on Jonas Kop, in the west, and the north slopes of Kanon Kop, above the Poesjenels River valley, in the east, a distance of approximately ten km. Most populations are found as dense local stands at about the 1 000 m contour on rather dry Table Mountain Sandstone slopes in sparse restio veld with *Protea laurifolia*, *P. subulifolia* and *Leucadendron nervosum* as the most prominent associated shrubs.

SPECIMENS EXAMINED

CAPE PROVINCE—3319 (Worcester): mountains of Baviaanskloof near Genadendal (-CD), 27/2/1815, *Burchell 7831* (K); Worcester, north facing slopes of Jonas Kop, 23/5/1968, *Williams 1194* (NBG, K); north-west slopes of Jonas Kop near Horlosie Kloof, 19/19/1971, *Rourke 1307* (NBG, PRE, K, MO, BOL, STE, S, NSW, L); on the path from Genadendal to Agterklip Hoogte valley (Poesjenelsrivier), approached from farm "Good Hope" (-DC), Feb., *G.P.K. Kirsten 527* (NBG).

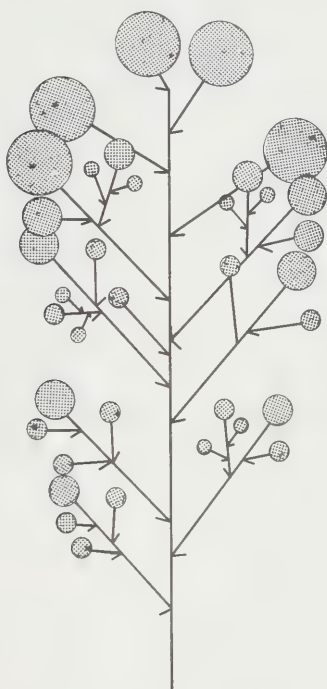


FIG. 6.
Serruria williamsii. Diagrammatic representation of inflorescence.